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Vol. XXXVI

No. 1



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Of The American Entomological Society will be held at 7.30 o'clock P.M. on the fourth Thursdays of each month, excepting June, July, August, November and December, and on the third Thursdays of November and December.

Communications on observations made in the course of your studies are solicited; also exhibits of any specimens you consider of interest.

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Several New Varieties of and Aberrant Lepidoptera (Rhopalocera) from California.

By J. D. GUNDER, Pasadena, California.

(Plate I)

It is calculated that about one-half of the listed varieties of United States Rhopalocera are now to be found within the borders of California, and yet few books have dealt exclusively or in part with this big field.

Mr. W. G. Wright, in his book "The Butterflies of the West Coast," did a great service by illustrating some of the older western things. It is really wonderful that twenty years ago he was able to do so well. In recent years our entomologists have found need of a new illustrated local text, compiled from long series and where possible collected personally from the various districts, so as to untangle some of the contested problems that have come up. The forthcoming work by Dr. John Adams Comstock, of the Southwest Museum, Los Angeles,

California, on "California Butterflies" will fill that want. Dr. Comstock needs no entomological introduction. His continual work of building up the Southwest Museum to a place deserving of the "third largest city" is his prime undertaking and will be his monument. Always a collector and interested in Lepidoptera by specialty, he has provided a safe place which some day will become the Mecca of the West for those seeking reference or a permanent depository for their collections.

I inscribe this plate to him and am pleased to suffix his name to several of the following specimens.

All figures are fairly true to color. They have been very slightly reduced in size.

1. **Brephidium exilis** Bdv. (fig. 11), ab. ♀ *coolidgei* nov. aberr. (fig. L).

Upper side. Primaries: normal. Secondaries: having the four black spots merging through and conspicuous, being heavily rimmed more so posteriorly by chalk white crescents forming a border at the outer margin much as on the under side; otherwise normal.

Under side. (Fig. L.) Primaries: inner half and beyond a brown reniform discal spot chalk white immaculate with irregular dentiform anterior edge; followed by a broad clay brown area to a row of small triangular white spots which extend from apex to inner angle; between these and outer margin a narrow border of dark brown which is cut near inner angle with white as in typical specimens; fringes as usual. Secondaries: inner half as in primaries with anterior edge more irregular and excurved, especially at interspaces of median nervules, with addition of three dark brown spots transverse across center base area; the black spots at outer margin as in normal specimens. Expanse: 17 mm.

Data: *Allotype* ♀ (Author's Coll.), Los Angeles, Los Angeles County, California. July 12, 1922. *Paratype* 1-♀ (Coll. of K. R. Coolidge), Los Angeles, Los Angeles County, California. Aug. 3, 1922.

Named for Mr. K. R. Coolidge, Los Angeles, California.

Note: Fig. 111 is an interesting *exilis* ♂ with five wings. It is normal except for the additional primary on the right. The author has two such identical specimens.

2. *Philotes battoides* Behr. var. **bernardino** B. & Mc. D. (fig. mm), ab. ♀ **baldyensis** nov. aberr. (fig. M).

Upper Side. Normal.

Under side. (Fig. M.) *Primaries:* Having a solid black area of the form of a Greek cross between the costal and inner margins in the discal area, its borders just included, and formed by all the spots except the one nearest the base which is larger and quadrate; the two submarginal rows of spots are as usual. *Secondaries:* All inner spotting heavier. Expanse: 19 mm.

Data: Allotype ♀ (Author's Coll.), Camp Baldy, San Bernardino County, California, July 5, 1924.

Named after Camp Baldy, which is also the type locality of var. *bernardino*.

3. *Plebeius monticola* Clem. (half-fig. nn), ab. ♀ **pallida** nov. aberr. (fig. N).

Upper side. (Fig. N.) *Primaries:* Normal. *Secondaries:* Entire replacement of submarginal red color by chalk white with no design change.

Under side. Ground color of both primaries and secondaries very chalk white with no change in pattern and spotting normal. Expanse: 27 mm.

Data: Allotype ♀ (Author's Coll.), Cajon Pass, San Bernardino Mountains, San Bernardino County, California, May 14, 1922.

4. *Glaucopsyche xerces* Bdv. form **mertila** Edw. (fig. oo) ab. ♂ **huguenini** nov. aberr. (fig. O).

Upper side. Normal.

Under side. (Fig. O.) *Primaries:* Row of black spots twice as large and egg-shaped with small ends pointing in; large black cell spot from which a whitish ray runs well into base. *Secondaries:* Row of spots equally enlarged; transverse cell streak becomes comet-shaped black spot parallel with costal margin and extending well into base and having additional small black spot, also white-encircled, half way to costal margin; additional small black spot well in base nearly concealed in the marginal hairs. Expanse: 28 mm.

Data: Holotype ♂ (Author's Coll.), San Francisco, California, April 24, 1917.

Named for Mr. T. C. Huguenin, San Francisco, California.

5. **Phaedrotes piasus** Bdv. var. **catalina** Reak. (fig. pp) ab.
♂ **gorgonioi** nov. aberr. (fig. P).

Upper side. Normal.

Under side. (Fig. P.) *Primaries:* Row of six black spots four times larger and oval; cell crescent and spot at base line become two large round spots joined together dumbbell form and very conspicuous. *Secondaries:* All spotting enlarged and elongated; cell area with irregular black tracings through the white. Expanse: 28 mm.

Data: Holotype ♂ (Author's Coll.), San Geronio Mountain, San Bernardino County, California, June 13, 1921.

Named after Mount San Geronio on whose slope this variety of *piasus* seems constant.

6. **Anthocharis sara** Bdv. form **reakirti** Edw. (fig. qq) ab.
♂ **sternitzkyi** nov. aberr. (fig. Q).

Upper side. (Fig. Q.) The orange red apical patch of normal specimens here becomes pale buff and the cream white ground color on both wings becomes chalk white with the under side markings showing through very distinctly; no design change.

Under side. Ground color very pale. Expanse: 36 mm.

Data: Holotype ♂ (Author's Coll.), San Francisco, California, April 22, 1924.

Named for Mr. R. F. Sternitzky, San Francisco, California.

Note: There seems to be no gradual transition of color in this species, which makes this specimen noteworthy, it being fresh and in perfect condition.

7. **Zerene eurydice** Bdv. ab. ♂ **newcombi** nov. aberr. (fig. R).

Upper side. (Fig. R.) Entirely lacking the orange color which is replaced by that lemon yellow found on normal specimens near the inner margin of secondaries. The replacement by lemon yellow is complete and is especially noticeable on secondaries, "dog's head" area and marginal apex spotting.

Under side. Lemon yellow as compared to orange tint of normal specimens. Expanse: 50 mm.

Data: Holotype ♂ (Author's Coll.), San Bernardino Mountains, San Bernardino County, California.

Named for Mr. Hal Newcomb, Pasadena, California.

Note: The figure on the plate shows a shadow near the body on the secondaries, this should not be mistaken for color. The replacement of color on this specimen is very similar to that of *E. eurytheme*, form *amphidusa*, ab. *unicitrina*, described and illustrated in Vol. XXXV, No. 5, Plate 2, Fig. J. For comparison with a normal *Z. eurydice* see fig. kk on above-mentioned plate.

8. ***Basilarchia lorquini*** Bdv. ab. ♂ ***comstocki*** nov. aberr. (fig. S).

Upper side. (Fig. S.) *Primaries:* Brown apical area twice larger and broad with no trace of markings except near costal on inner side where two small faint white markings occur; row of white spots through discal area become small and barely visible, being suffused by black, with the largest one near inner margin smaller than the smallest one on normal specimens and those nearest margins absent; cell spot merest white speck. *Secondaries:* Entirely black except for remains of suffused white spot in interspace above submedian vein; trace of red at anal angle as in normal specimens.

Under side. *Primaries:* White spotting as above with black in corresponding suffusion. *Secondaries:* Absence of white spotting with black and white replacement, otherwise normal. Expanse: 51 mm.

Data: Holotype ♂ (Author's Coll.), Bishop, Inyo County, California, August 28, 1921.

Named for Dr. John Adams Comstock, Los Angeles, California.

9. ***Dione vanillae*** L. ab. ♂ ***comstocki*** nov. aberr. (fig. T).

Upper side. (Fig. T.) *Primaries:* Black veining very heavy with brown interspaces practically closed and wholly so at the interspaces of the three black spots, the upper two of which are confluent with the black; cell area entirely black with white specks marking position of former black spots. *Secondaries:* Black at outer margin which in normal specimens forms a row of round brown spots, here becomes a broad solid black area, the inner side of which irregularly pierces the brown at interspaces, most deeply so at those of the two black spots which become confluent and are part of the black area itself.

Under Side. *Primaries:* Interspace silver spots at apex con-

fluent; ground color of cell entirely black; heavy black shading near inner angle. *Secondaries*: All silver spots near costal margin become black, others remain silver but are confluent through the interspaces. Expanse: 53 mm.

Data: Holotype ♂ (Author's Coll.), Monrovia, Los Angeles County, California, July 19, 1924.

Named for Dr. John Adams Comstock, Los Angeles, California.

10. *Leptotes marina* Reak. (fig. uu) ab. ♀ *violacea* nov. aberr. (fig. U).

Upper side. (Fig. U.) *Primaries*: Violet blue overcasting entire wing except for a darker connecting border along all of costal and outer margins; normal spotting and lines scarcely visible; no white marks. *Secondaries*: Clear violet blue, except for strip along costal margin and some shading at outer margin where only one spot is conspicuous with no white darts showing; no center marking. *Under side*. Normal. Expanse: 22 mm.

Data: Allotype ♀ (Author's Coll.), Oak Glenn, Riverside County, California, July 19, 1924.

11. *Philotes sonorensis* Feld. (figs. 1a, 2a, 3a) form *comstocki* nov. form. (figs. 1-♂, 2-♀, 3-♂ underside).

Differs from *sonorensis* on the upper side in both sexes in having only one large black spot at the cell on the primaries, instead of four or more above the orange spots. Also no spotting on the secondaries. The under sides are quite different being solid brown-black through the basal and discal areas instead of being spotted and shaded; similarly, the single black spot is again in evidence.

♂.—(Holotype, fig. 1.) (Paratype under side, fig. 3.) Expanse: 24 mm.

Upper side. Brilliant silvery blue; alternately spaced black and white fringes; outer margins edged by a black line; primaries with a narrow, black, marginal border, rather broad at apex and tapering off invisibly at inner angle; two orange-red patches near margin in median nervule interspaces; prominent, irregular, single, black spot at end of cell. *Under side*. *Primaries*: Greyish brown; orange-red patches and single black spot repeated; line of small transverse black marks parallel and near to outer margin, somewhat flared in gray and interrupted

by the two orange patches. *Secondaries*: Darker greyish brown through all of basal and discal areas than on primaries with the limbal lighter in shade and having a row of faint white spots barely discernible through its length; at end of cell a faint transverse black streak.

♀.—(Allotype, fig. 2.) Expanse: same.

Upper side. Darker blue when compared with male; orange patches on primaries and secondaries in like position; single black cell spot as in male; primaries have a broad and continuous black border at outer margin, preceding which is a black line cut by the veins and orange patches; black border on secondaries becomes a series of black spots in interspaces. *Under side*. As in male.

Data: Holotype ♂ (Author's Coll.), San Gabriel River, Duarte, Los Angeles County, California, March 15, 1922. Allotype ♀ (Author's Coll.), San Gabriel River, Duarte, Los Angeles County, California, February 20, 1922. Paratypes 6-♂ and 2-♀, similar dates through 1922 to 1923.

Paratypes and topotypes will be deposited with the Southwest Museum, Los Angeles, and the Academy of Sciences, San Francisco.

Named for Dr. John Adams Comstock, Los Angeles, California.

Note: Specimens first taken were thought aberrations, however, as many were found by local collectors, *all remaining constant, and in both sexes alike*, this new form was anticipated.

12. *Polites sabuleti* Bdv. var. *comstocki* nov. var. (fig. 4-♂, fig. 5-♀).

P. sabuleti is widespread over California, both along the coast and through the highlands from San Diego north. Var. *tecumseh* is a higher altitude race, smaller in size and with extended markings. This new variety *comstocki* will be termed a desert race, as it ranges through the Imperial Valley along the roadside vegetation and shrubs of the irrigation ditches. It differs principally from *sabuleti* on the under side, having a paler ground color with all markings very obscure. Some specimens show a clear ground with no markings in evidence, the darkest marked being less than that found on a series of straight *sabuleti*. The females are apt to be more heavily marked in the basal areas.

Data: Holotype ♂ (Author's Coll.), El Centro, Imperial County, California, October 4, 1923. Expanse: 15 mm. (Fig. 4a, paratype, under side.) Allotype ♀ (Author's Coll.), El Centro, Imperial County, California, October 5, 1923. Expanse: 18 mm. (Fig. 5a, paratype, under side.) Paratypes: 12-♂, 3-♀, similar dates, also localities. Paratypes and topotypes will be deposited with the Southwest Museum, Los Angeles, and the Academy of Sciences, San Francisco, California.

Named for Dr. John Adams Comstock, Los Angeles, California.

13. **Argynnis calippe** Bdv. (fig. 6a) var. **comstocki** nov. var. (figs. 6-♂, 7-♀).

♂.—Holotype (fig. 6). Expanse: 53 mm.

Typical *calippe* evidently found around the San Francisco district and described by Boisduval and figured correctly, among others, by Oberthür, has a *red* fulvous ground color between the submarginal row of crescents and row of round spots on both wings, whereas this southern variety, *comstocki*, has a clear fulvous ground color over the entire surface of the wings. Also, this southern group has the black shading confined to the basal area and up to the mesial line, whereas, in the other, the black shading extends *entirely* along the inner margin on the primaries and well through the discal area of the secondaries. Compared in series, the northern ones show slightly heavier vein markings, although this varies in individuals. W. G. Wright's figures show this southern variety, but evidently he did not have access to the true *calippe* and hence did not notice the difference. Among other illustrators even Holland shows the true northern *specimens* (compare fig. 6 with fig. 6a). The under sides remain about the same, except that the red color is more widely spread which probably causes the constant difference noticeable on the upper sides.

♀.—(Allotype, fig. 7.) Expanse: 61 mm.

Same descriptive difference holds good. The females are larger which is generally true in the argynnids.

Data: Holotype ♂ (Author's Coll.), Los Angeles, Los Angeles County, California, May 26, 1919. Allotype ♀ (Author's Coll.), Los Angeles, Los Angeles County, California, May 20, 1920. Paratypes 11-♂ and 5-♀, same locality and similar dates, in collections of Mr. Chas. Ingham and author. Paratypes and topotypes will be deposited with the Southwest Museum,

Los Angeles, and the Academy of Sciences, San Francisco, California.

Named for Dr. John Adams Comstock, Los Angeles, California.

Note: Gratitude is expressed to Mr. Chas. Ingham, Secretary Lorquin Entomological Club, Los Angeles, California, for loan of many specimens for comparison.

EXPLANATION OF PLATE I.

Fig. L—*Brephidium exilis* Bdv. ab. ♀ *coolidgei* nov. aberr. (under side).

Fig. ll—*Brephidium exilis* Bdv. (typical ♀-under side).

Fig. ll—*Brephidium exilis* Bdv. (showing 5 wings).

Fig. M—*Philotes battoides* Behr. var. *bernardino* B. & McD. ab. ♀ *baldyensis* nov. aberr. (under side).

Fig. mm—*Philotes battoides* Behr. var. *bernardino* B. & McD. (typical ♀-under side).

Fig. N—*Plebeius monticola* Clem. ab. ♀ *pallida* nov. aberr.

Fig. nn—*Plebeius monticola* Clem. (typical-♀).

Fig. O—*Glaucopsyche xerces* Bdv. form *mertila* Edw. ab. ♂ *huguenini* nov. aberr. (under side).

Fig. oo—*Glaucopsyche xerces* Bdv. form *mertila* Edw. (typical ♂-under side).

Fig. P—*Phaedrotes piasus* Bdv. var. *catalina* Reak. ab. ♂ *gorgonioi* nov. aberr. (under side).

Fig. pp—*Phaedrotes piasus* Bdv. var. *catalina* Reak. (typical ♂-under side).

Fig. Q—*Anthocharis sara* Bdv. form *reakirti* Edw. ab. ♂ *sternitskyi* nov. aberr.

Fig. qq—*Anthocharis sara* Bdv. form *reakirti* Edw. (typical-♂).

Fig. R—*Zerene eurydice* Bdv. ab. ♂ *newcombi* nov. aberr.

Fig. S—*Basilarchia lorquini* Bdv. ab. ♂ *comstocki* nov. aberr.

Fig. T—*Dione vanillae* L. ab. ♂ *comstocki* nov. aberr.

Fig. U—*Leptotes marina* Reak. ab. ♀ *violacea* nov. aberr.

Fig. uu—*Leptotes marina* Reak. (typical-♀).

Figs. 1, 2, 3—*Philotes sonorensis* Feld. form *comstocki* male (fig. 1), female (fig. 2), male (under side, fig. 3).

Figs. 1a, 2a, 3a—*Philotes sonorensis* Feld. typical male (fig. 1a), typical female (fig. 2A), typical male, under side (fig. 3a).

Figs. 4-5a—*Polites sabuleti* Bdv. var. *comstocki* nov. var. male (fig. 4), male, under side (fig. 4a), female (fig. 5), female, under side (fig. 5a).

Figs. 6-7—*Argynnis calippe* Bdv. var. *comstocki* nov. var. male (fig. 6), female (fig. 7).

Fig. 6a—*Argynnis calippe* Bdv. typical male (fig. 6a).

A Preliminary List of the Ants of Kansas¹ **(Hymenoptera, Formicidae).**

By WM. P. HAYES, Kansas Agricultural Experiment Station.

The ants occurring in Kansas have given little concern to collectors and, consequently, our knowledge of the different species in the state is meager. Only four general lists of Kansas Hymenoptera with records of ants found within the boundaries of the state are available. Snow's list of Kansas Hymenoptera is conspicuous by its lack of specific reference to ants and only two are cited with generic names. Bridwell (1899), in his "List of Kansas Hymenoptera," makes reference to 15 ants occurring in Kansas and among these only four were specifically identified. These records were made from specimens in the State Agricultural College collection and in the collection of Baker University. Tucker (1909), in a list of "Hymenoptera collected in Kansas and Colorado," enumerates 21 Kansas ants, most of which were collected in the vicinity of Lawrence. The fourth list which contains reference to Kansas ants is found in Volume 30 of the Transactions of the Kansas Academy of Science in which Crevecoeur (1922) in "Additions to the List of Kansas Hymenoptera" mentions 27 ants. Of these, eight are without specific or varietal designation, and four of the remainder were previously reported in the Tucker list.

The writer collected a number of ants in Cowley County in 1914 and in 1915. These were determined by Dr. W. M. Wheeler. More recently, ants collected in the vicinity of Manhattan by the writer and those in the collection of the Kansas State Agricultural College were determined by M. R. Smith of the Agricultural and Mechanical College of Mississippi, one of the American authorities on the family Formicidae to which the ants belong. Since these determinations include many ants previously unrecorded from the state, the following list was prepared which adds 31 species, subspecies, or varieties.

It is of interest to note that Kansas occupies an unique position in respect to the ant fauna of the United States. Here are found species whose range is northern, some which inhabit

¹Contribution No. 334 from the Entomological Laboratory, Kansas State Agricultural College.

the southern states, others from the eastern states and finally those found only in the western states. With this ideal collecting ground, it is more than probable that by systematic collecting a large number of other species may be found in the state. It is probable, therefore, that the list here presented is far from complete.²

PONERINAE.

STIGMATOMMA PALLIPES Haldeman. This species was collected by the writer April 14, 1914, at Winfield, and determined by Wheeler. Its colony was found under a stone which also sheltered a colony of *Solenopsis molesta* Say. Specimens determined by M. R. Smith are in the Kansas Agricultural College collection from Riley County, collected by J. B. Norton, April 30. The range of this species as given in Wheeler's list is Canada to Texas and hence it can be expected to be found widely scattered over the state. This is believed to be a new record for the state, however.

PROCRATIUM CROCEUM Roger. Tucker (1909, p. 288) cites the occurrence of this species in Kansas with the following comment: "Proceratium croceum Roger, Kansas, Lawrence; August, a single male specimen; 'probably this species,' according to Professor W. M. Wheeler, who further remarked: 'This is an extremely rare ant—with the exception of a male of *P. crassicornis* in my collection—the only known male of this interesting genus. The workers are yellow and live in small colonies in rotten wood in rich forests.' New to Kansas list." The range of this species, according to Wheeler, is "Southern states to Texas."

PONERA COARCTATA subsp. **PENNSYLVANICA** (Buckley) Emery.

Workers of this species were collected by the writer in Riley County. In the Agricultural College collection are workers collected by J. B. Norton, March 20. These specimens were determined by M. R. Smith as merely *Ponera pennsylvanica*. In the Crevecoeur list, two separate species are cited as *Ponera coarctata* Latr. and *Ponera pennsylvanica*. It is believed that there has been a misconception of these two names and that both refer to this species and subspecies.

²Acknowledgments: The writer is indebted to Dr. W. M. Wheeler and Mr. M. R. Smith for the identification of specimens. The authority for determinations where cited are referred to by the use of initials W. M. W., and M. R. S. To Mr. Smith the writer is also further indebted for supplying the names of several Kansas ants in his own collection. The references to the range of species, when cited, are taken from Wheeler's List of Described North American Ants (1910), which is also followed in the order of arrangement.

The range of this species is the Northeastern states and Canada, according to the Wheeler list. It nests under stones and in rotten logs in small colonies and according to Wheeler (1916, p. 581) the males and females appear in late August and early September.

P. TRIGONA var. OPACIOR Forel. Mr. M. R. Smith of the Mississippi Agricultural and Mechanical College writes that he has specimens of this species in his collection from Kansas. It has not previously been recorded in state lists. It is recorded by Wheeler as a Texas species.

DORYLINAЕ.

ECITON (ACAMATUS) SCHMITTI Emery. Workers of this species were collected by J. B. Norton, in Riley County, on April 28 and September 27, which have been determined by M. R. Smith and are now in the collection of the State Agricultural College. Smith also has this species in his collection from Kansas. It is recorded in the Crevecoeur list as *Eciton schmittii*. The range of this species is Texas to Missouri and Colorado (Wheeler).

E. (ACAMATUS) OPACITHORAX Emery. Workers of this species were collected by the writer in April, 1916, and were determined by M. R. Smith. The record is thought to be new for the state. Wheeler's check list gives the distribution of this species from Texas to Missouri and Smith (1916, p. 110) records its occurrence in South Carolina with a later notation (1918, p. 18) that the workers "have vestigial eyes, hence lead hypogæic or subterranean lives. Specimens were captured while they were trailing over the ground in single file."

E. (ACAMATUS) COMMUTATUS Emery. Workers of this species determined by Wheeler were collected by the writer April 19, 1914, at Winfield. This is a southern form recorded only from Texas in the Wheeler list and this record of its occurrence in Kansas gives a new state record. M. R. Smith also has this species from Kansas in his collection.

E. sp. Seven males in the State Agricultural College collection were placed in this genus by M. R. Smith. They were collected by C. L. Marlatt in September, probably in Riley County. These are probably the specimens cited in the Bridwell list from the State Agricultural collection as *Eciton sp.*

E. (ACAMATUS) NIGRESCENS Cresson. This species has not been seen by the writer, but is recorded in the Wheeler list as occurring from Kansas to Texas, and M. R. Smith has specimens from this state.

(To be continued)

Three New Nearctic Tachinidae (Dipt.).*

By C. HOWARD CURRAN, Ottawa, Ontario.

Synopses of the Genera *Linnaemyia* and *Microphthalma* are given herewith together with descriptions of new species. In the latter genus only two species are recognized from the Nearctic region in Aldrich's "Catalogue." I have not seen *pruinosa* Coq. and it is omitted from the key.

Linnaemyia R. D.

This genus is allied to *Ernestia* and has much the same habitus. The palpi are reduced, sometimes not over four times as long as wide, at others fully ten times, or almost equal in length to the second section of the proboscis. The length of the palpi cannot be considered generic, nor can the presence of more than one pair of discals on the intermediate abdominal segments. The characters limiting the genus may be briefly defined as follows: epistoma produced; eyes densely pilose; antenna reaching almost to the vibrissae, third joint long and broad; palpi reduced, slender, more or less tapering, never swollen apically. Bend of fourth vein with strong appendage, the ultimate section of the vein strongly oblique, joining the costa far before the tip; abdomen robust, with at least one pair of discal macrochaetae on the second and third segments. Beneath the inner base of the squamae a row or group of black spinules.

The appendiculate fourth vein and reduced palpi, as well as larger antennae, distinguish the genus from *Mericia*. *Ernestia* and *Bonnetia* both lack the spinules beneath the squamae.

KEY TO SPECIES.†

1. Only one pair of posterior acrostical bristles,
anthracina Thoms.
 Three pairs of posterior acrosticals.....2
2. Genital segments of ♂ red; fourth segment of female
 wholly or broadly red on apex3
 Genital segments of ♂ black; female abdomen en-
 tirely black (Labrador).....varia n. sp.

*Contribution from the Division of Entomology, Entomological Branch, Dept. of Agric., Ottawa.

†*Bonnetia compta* L. may be readily distinguished by the soft-haired cheeks and absence of spinules below the inner base of the squama.

3. Fourth segment of female entirely red; palpi not over four times as long as wide; shorter than thickness of proboscis at point of attachment) (Jamaica),
compactus Curran
 Fourth abdominal segment of female with basal half black4
4. Palpi brown; second and third abdominal segments with a single pair of discals (widespread),
haemorrhoidalis Fabr.
 Palpi opaque black, longer; second and third abdominal segments with two to five pairs of discals in irregular rows (British Columbia)...*nigrescens* n. sp.

Linnaemyia varia n. sp.

♂. Length 11 mm. Antennae velvety black, with greyish sheen, second joint elongate, the third almost twice as long, its apex oblique, the corners rounded; arista black, wholly thickened, slightly tapering, microscopically pubescent; second segment enlarged at apex, four times as long as wide. Head black, the upper and anterior border of the cheeks, a triangle outside the facial ridges below and the depression of the facialia, reddish yellow. Face, pale portions of cheeks and lower two-thirds of front silvery white pollinose; back of head grey pollinose except broadly along the orbits on the upper half. Front a little wider than one eye; frontal vitta reddish brown, wider than parafrontal; frontal bristles fairly strong, strongly diverging below, reaching the middle of the second antennal joint; the upper pair much stronger than the others; verticals fairly strong, not duplicated. Cheeks half the eye height. Palpi brown, not much longer than second antennal joint, slender, flattened, their sides practically parallel, ending in two fine bristles, the lower one two-thirds as long as the palpus.

Scutellum reddish, the base black. Pleura thinly greyish pollinose; pile of thorax stout, fairly long. Legs black, apices of femora narrowly reddish. Anterior tibiae with an entire row of fairly long antero-dorsal bristles, a row of shorter postero-dorsal, and an incomplete row of posterior bristles. Middle tibiae with similar rows, the posterior row composed of two or three bristles and there are two or three ventrals beyond the middle; posterior tibiae with a complete row of long antero-dorsals, an incomplete row of postero-dorsals, abbreviated at either end, and three antero-ventral bristles. Squamae white. Halteres yellow, the stem somewhat infuscated. Wings cinerous hyaline, the veins black.

Abdomen shining black, the sides sometimes reddish; from

posterior view thinly greyish pollinose, except the immediate apex of the third and hind margin of the fourth segments. Second segment with discals and marginals on the median fourth, the first, second and third, with lateral marginals and sub-marginals, the third with discals on median fourth and marginal row; fourth segment with bristles on practically the whole surface. Genitalia black; posterior forceps tapering from base to apical fourth, thence with parallel sides, the apex widened, convex on either side, the tip rather rectangular; outer forceps rather broad, slightly tapering, their apex rounded, with a small projecting tooth on the outer side below the middle.

♀. Readily distinguished from allied species by the wholly black abdomen. Only one pair of discals on second and third abdominal segments.

Holotype, ♂, Hopedale, Labrador, June 12, 1924, (Rev. Perrett); No. 1250 in the Canadian National Collection, Ottawa.

Allotype, ♀, same locality, July 28, 1922.

Paratype, ♂, same locality, June 23, 1922.

Linnaemyia nigrescens n. sp.

Length 11 mm. Differs from *varia* as follows: first joint of arista as broad as long, the second three times as long as wide; whole middle of face and epistoma yellow, the cheeks brownish yellow. Front not quite as wide as one eye. Scutellum black, the apex more or less reddish. Abdominal bristles a little more extensive, the laterals on the middle of the third segment almost connected with the discals. Genitalia reddish; the forceps shining black; posterior forceps more evenly tapering, narrower before the apex, tooth of outer forceps stronger.

Holotype, ♂, Hedley, British Columbia, July 23, 1923, (C. Garrett); No. 1251 in the Canadian National Collection, Ottawa.

The yellow epistoma and pale cheeks will readily separate this species from the preceding.

Microphthalma Macq.

It seems probable that *Microphthalma* is a synonym of *Megaprotopus* Macq., but without the genotype of the latter before me I cannot decide. The species before me are therefore treated under the former name. According to Macquart's figure (Plate 10, f. 2) the apical cell ends in the tip of the wing in *M. nigra*,

while the figure of *Megaprosopus* (fig. 1) shows the venation of *M. disjuncta*, but a much more robust abdomen than occurs in males of *Microphthalma*.

The species of this genus are parasitic upon "white grubs" and the series secured from Hemmingford, Quebec, have been captured in the vicinity of pastures, etc., which have been practically destroyed by the grubs. Many specimens have been reared from pupae in this region.

MICROPTHALMA—TABLE OF SPECIES.

1. Three postsutural dorsocentral bristles; pollen of mesonotum ochreous grey.....2
Four postsuturals or if the third one weak, the space between the second and fourth much greater than between the first and second; pollen of mesonotum slaty grey to rusty brownish on the disk; sides of abdomen of ♂ usually reddish....*phyllophagae* n. sp.
2. Apical half of each segment shining black, not pollinose when viewed from behind (*nigra* Macq.),
disjuncta Wd.Abdomen wholly pollinose when viewed from behind,
michiganensis Tns.

Microphthalma phyllophagae n. sp.

♂. Length 8 to 15 mm. Cheeks, from ventral view, dull reddish brown; sides of face silvery greyish pollinose with more or less strong golden brown tinge; parafrontals deep ochreous, becoming paler at the orbits; median vitta reddish, margined with brown or brown above; hairs on sides of face and front bristle-like, strong. Back of head ochreous above, grey on lower two-fifths; front two-thirds as wide as either eye. Palpi short, broad, reddish with infuscated base. Antennae reddish, the third joint brownish red on apical three-fourths in most specimens, sometimes wholly reddish; arista blackish, with reddish basal joints and short black pubescence.

Mesonotum rusty brownish with a pair of slender median vittae on the anterior two-thirds and a broader, interrupted sub-lateral one on either side, tapering to either end. The pollen varies in color to slaty grey in occasional specimens to quite brownish at times; sides with paler pollen, the pleura grey. Four postsutural dorsocentrals, the third (from the rear) weaker than the others, rarely not differentiated, in which case the second and fourth bristles are widely spaced, leaving room for the third; normally three sterno-pleurals, rarely an adventitious fourth.

Legs black, tibiae usually reddish brown or brownish red except the apices; femora thinly greyish pollinose except above. Pulvilli pallidly brownish, their base brown; all the claws long.

Wings cinereous hyaline, with yellowish tinge in mature specimens and yellow base. Squamae whitish. Halteres reddish, the stem and base of knob more or less infuscated.

Abdomen normally with the first and fourth segments and median fourth of the other two black in ground color, the fourth segment often also reddish, in which case the median vitta is quite narrow, or there may be only a reddish tinge towards the sides, the venter of the second, third, and often the fourth segments, reddish, abdomen wholly greyish pollinose, somewhat tessellate. Genitalia reddish except the base. First and second segments each with one lateral marginal, the second and third each with a median marginal pair, the third with three (rarely two or four) lateral marginal bristles; fourth segment with sub-apical and pre-apical row of four or five pairs of bristles.

♀. Front wider than one eye; two orbitals. Pollen of front and thorax rusty brown; thorax more often with only three postsutural dorsocentrals.

Holotype, ♂, Hemmingford, Quebec, August 15, 1924, (G. H. Hammond); No. 1224 in the Canadian National Collection, Ottawa.

Allotype, ♀, August 15, otherwise same data.

Paratypes, 60 ♂, 40 ♀, same locality and collector, many of them reared, August 8th to 30th, 1924. In addition I have specimens from the Ottawa district and Manitoba, and about 40 other specimens from Hemmingford and Covey Hill, Quebec. There is also a series of specimens from New York in the Cornell University Collection.

The genitalia are very similar to those of *M. michiganensis* but the claspers are less narrowed and not acute at the apex, while the forceps are a little more concave behind the smooth surface. The wholly pollinose abdomen in both sexes at once precludes this from being *disjuncta* Wied.

***Microphthalma michiganensis* Tns.**

I have five pairs of this species from Manitoba. The mesonotum is rather evenly ochraceous grey pollinose and the vittae, very narrow, the outer ones, but little evident. Like *phyllophagae*, the abdomen is wholly pollinose when viewed from behind. Otherwise it agrees more with *disjuncta*.

Microphthalma disjuncta Wied.

A single male from Macdiarmid, Lake Nipigon, Ontario, agrees perfectly with Wiedemann's description of *disjuncta*. The abasal half of the second, third and fourth segments is silvery greyish white pollinose while the apical half is shining black. *M. nigra* Macq. has been placed as a synonym of *disjuncta* but this disposition of *nigra* may not be correct. Macquart's figure shows the arista with long pubescence (or plumose?). His assertion, "Abdomen d'un noir un peu bleuâtre avec quelques reflets gris," does not apply so well to *phyllophagae* as to *michiganensis* female (I have no female of *disjuncta*), provided the thorax has been wet and the pollen not evident. Macquart's specimen evidently had the thorax discolored. However, it is possible that the species described here as new is actually *nigra* Macq., but this does not seem likely. Two additional males from Mississippi agree with the Macdiarmid specimen.

New Mites of the Family Dermanyssidae (Acarina).

By H. E. EWING, Bureau of Entomology,
U. S. Department of Agriculture.

In the following short paper five new species are described: one of *Serpenticola*, one of *Leiognathus*, two of *Liponyssus* and one of *Dermanyssus*. All types are catalogued and deposited in the United States National Museum.

Serpenticola easti, new species.

♀. Medium-sized, when fully engorged, over twice as large as when unfed. Palpi moderate, extending slightly beyond the tips of first femora; palpal spur divided to its base. Anterior dorsal shield as broad as long, widest slightly behind its middle, subtruncate behind and not extending beyond coxae IV. Setae of anterior dorsal shield as follows: An anterior marginal pair situated at the anterior corners of shield; three pairs of lateral marginal setae, one of which is situated at the broadest part of the shield; four submedian pairs, the most anterior of these being much nearer the median line than the others; a single other pair situated between the last lateral marginal pair and the third submedian pair. Posterior dorsal shield minute, slightly emarginate in front but otherwise almost circular; situated

almost directly above the anal shield. Peritreme short, scarcely extending forward as far as the middle of coxae II, almost straight. Sternum fully twice as broad as long, concave behind; with two pairs of setae, one on front margin, submedian in position and one on lateral margin, slightly in front of posterior corners of plate. Genito-ventral plate very long and sharply pointed posteriorly. It extends for almost one-half the distance from the posterior coxae to the anal plate and is without setae. Anal plate broadly and evenly rounded in front and with moderate scobinate area posteriorly; anal opening with a rim of uniform thickness and situated less than one-half its greatest diameter from the anterior margin. Paired anal setae situated somewhat in front of the posterior margin of anus, in length equal to the greatest diameter of the anus; posterior anal seta situated at about one-half the distance from the anal opening to the posterior end of anal plate. Legs moderate; first pair the longest. Length, 1.17 mm; width, 0.75 mm. δ , unknown.

Type-locality, (?). *Type-slide*, Cat. No. 895, U. S. N. M.

Described from five females taken from a western lizard, *Sceloporus graciosus*, kept in captivity by C. S. East. This species is related to *S. serpentium* (Hirst), but differs from Hirst's species in the shape of the anterior dorsal shield, the number of setae on this shield and in a few other characters.

Leiognathus brevipes, new species.

♀. A rather small, stout-legged species. Palpi stout, extending slightly beyond the tips of anterior femora. Dorsal shield large, almost as broad as the cephalothorax. Peritreme long, curved, extending beyond the second coxae. Sternal plate broader than long. Anal plate about two-thirds as broad as long, broadly rounded in front and with a conspicuous, scobinate area at the posterior end. Anal opening about one and one-half times as long as broad, with a rim of uniform thickness and situated about its greatest diameter from the anterior margin of anal plate. Paired anal setae rather small, situated slightly in front of the posterior margin of anal opening; posterior anal seta about the same size as paired anal setae and situated about one-half the distance from the posterior margin of the anal opening to the tip of anal plate. Legs stout, first pair the longest. Femur I but slightly longer than broad; patella I about as long as broad; tibia I equal to patella I; tarsus I equal to tibia I plus patella I and with sides parallel. Tarsal claws of all legs stout and not surpassing pulvilli. Length, 0.56 mm.; width, 0.27 mm. δ , unknown.

Type-locality, East Falls Church, Virginia. *Type-slide*, Cat. No. 896, U. S. N. M.

Described from several females taken by E. A. Chapin from a scarlet tanager, *Piranga erythromelas*, East Falls Church, Virginia, May 6, 1923. In this species the body is strongly constricted between the cephalothorax and abdomen. The species is more nearly related to *L. constrictus* Ewing, but differs from *L. constrictus* in having a broader dorsal shield, less prominent anal setae, stouter legs and in a few other characters.

***Liponyssus robustipes*, new species.**

♀. A stout species with enlarged second legs. Palpi short, hardly reaching the tips of the first femora. Dorsal shield large, covering most of the cephalothorax and extending posteriorly to beyond the anus. Peritreme long and sinuous, extending forward to the middle of the first coxae. Setae of body stout, straight, simple and peg-like. Sternal plate twice as broad as long; front margin almost straight, posterior margin deeply concave; four sternal setae present, first pair near the front margin, second pair near the posterior angles. Genito-ventral plate long, pointed behind, extending over half way from the last pair of coxae to the anal plate and bearing a single pair of setae situated between the posterior coxae. Anal plate broadly rounded in front and with a conspicuous scobinate area at the tip. Anus situated about two-thirds its greatest diameter from the front margin of anal plate, its rim thicker in front and behind than at the sides. Paired anal setae situated in front of the posterior margin of anal opening; posterior anal seta situated more than half the distance from the anus to the tip of anal plate. Legs rather large and long; second pair decidedly enlarged. Patella I almost as long as femur I; tibia I subequal to patella I; tarsus I slightly tapering and about as long as tibia I plus patella I. Femur II broader than long; patella II subequal to femur II; tibia II as long as patella II but not so stout; tarsus II tapering, not as long as tibia II plus patella II. Length, 0.63 mm.; width, 0.41 mm. ♂, not known.

Type-locality, (?). *Type-slide*, Cat. No. 897, U. S. N. M.

Described from several females, taken from a bat, *Tadarida mexicana*, March 5, 1924 (Bishopp, No. 11346). This species differs from other described American bat-infesting species of *Liponyssus* in having the second pair of legs much stouter than the others.

Liponyssus chilensis, new species.

♀. Palpi short, slightly longer than femur I. Dorsal plate large, broad, pointed behind. Body setae small, almost minute. Peritreme long, curved, but not sinuous. Sternum broader than long, with projecting posterior lateral processes and provided with three pairs of setae; the first pair on the front margin, the second pair at the base of the posterior projections and the third pair at the tips of these projections. Anal plate broadly rounded in front and with a conspicuous scobinate area at tip. Anus with rim of uniform thickness, situated two-thirds its greatest diameter from the front margin of anal plate. Paired anal setae small, situated at the level of posterior margin of anus. Posterior anal seta subequal to paired anal setae and situated at the front margin of scobinate area. Coxae without spines except for the second pair. In front, coxa II has a large, blade-like spine. Patella I and tibia I subequal; tarus I not equal to tibia I plus patella I. Length, about 0.80 mm.; width, 0.45 mm. ♂, unknown.

Type-locality, Chile. *Type-slide*, Cat. No. 898, U. S. N. M.

Described from a single female taken from a bat, *Tadarida brasiliensis*, by C. E. Porter in Chile (probably at Valparaiso). The presence of but a single pair of coxal spines which are located on the second coxae, distinguishes this species from the other American bat-infesting forms.

Dermanyssus oti, new species.

♀. A small stout species. Palpi stout, yet extending to the bases of the tibiae of the short anterior legs. Dorsal plate shield-shaped, broadest slightly in front of its middle; not sharp-pointed behind but narrowly rounded. Peritreme very short, not much longer than coxa III, once curved. Sternal plate a strongly arched band of chitin bearing three pairs of subequal, long setae. Genito-ventral plate a tongue of chitin reaching to the middle of the abdomen. Anal plate broadly egg-shaped in outline. Anus with rim much thickened behind, situated about two-thirds its greatest diameter from the tip of anal plate. Paired anal setae situated slightly in front of a line drawn through the middle of anus. Posterior anal seta subequal to paired anal seta and situated almost contiguous with the posterior margin of anus. Legs short and stout, all shorter than the body. Femur I broader than long; patella I subequal with femur I; tibia I not so broad but longer than patella I; tarsus I scarcely equal to the combined length of tibia and patella. Length, 0.63 mm.; width, 0.39 mm. ♂, not known.

Type-locality, Bloomington, Indiana. *Type-slide*, Cat. No. 899, U. S. N. M. .

Described from two females taken from a screech owl, *Otus asio asio*, by R. M. Howe, at Bloomington, Indiana. The mites were stated to be most numerous on the head and face of the host. This species is very distinct because of its short stout legs.

Work on the United States National Museum Collection of Muscoid Diptera from 1914 to 1919.

By CHARLES H. T. TOWNSEND,
Itaquaquecetuba, Sao Paulo, Brazil.

In order to prevent misconceptions arising from what has already been published, or may be published in the future, it becomes desirable to make a detailed statement regarding the work I did on the muscoid collection from August, 1914, to March, 1919, while acting as honorary custodian of the same. Sundry and various acts and omissions, of which I am not guilty, but which, were they true, would reflect seriously on my standing as a muscoid student, have been attributed to me in recent scattered articles and papers. By referring to the following statements, anyone may judge for himself as to the truth or falsity of all such imputations.

The system I adopted was to make a careful study of all the genotypes possible to secure and arrange them in convenient tribes. This would immensely augment the working value of the collection, and also verify synonymy. The first and most important step was to have as many authentically determined genotypes as possible for comparison in the routine work of determinations.

First of all, I verified separately in the literature every genotype designation for all the muscoid genera of the world, and published the necessary supplementary notes to bring the records to date.

I donated a large number of holotypes and allotypes of my own genotypes recently erected, and the collection already contained a great many genotypes of mine described in former years.

I collected a large amount of material in both the East and West of the United States, which furnished many more genotypes.

I arranged exchanges of material with Dr. Bezzi, of Italy, and Dr. Villeneuve, of France, in order to secure authentic specimens of European genotypes.

I secured many genotypes by working up material from abroad in both large and small lots, notably Asiatic and South American.

I succeeded in identifying many further genotypes amongst the undetermined material in the collection, and erected new genera as needed.

Most of the Coquillett holotypes were in the collection, also various holotypes of other North American authors.

Altogether, I had assembled in the collection some 800 genotypes of muscoid flies up to the time I left, all of which I had studied.

After a genotype had been studied by me and the determination verified, it was placed in a separate small tray, having been first labeled by me, unless it already bore the label of Bezzi or Villeneuve or a type label.

Outside of holotypes and allotypes so labeled, all specimens that I studied with any finality bore my own labels or those of Bezzi or Villeneuve.

Other specimens which had not been definitely studied by me, but which appeared on casual inspection to be possibly identical with or closely allied to a labeled genotype, were often placed in the same tray with the specimen or specimens of the said genotype, awaiting complete study of the unlabeled material. This was done so that the specimens in question might not be lost sight of, but would be at hand for comparison with the said genotype when it became possible to give them detailed study.

So far as practicable, I also brought together from the literature the characters of genotypes not in the collection, and arranged all the muscoid genera in something over 100 tribes.

All references in my published writings and manuscript

notes to any given genus refer only to the genotype of said genus, unless otherwise stated.

The characters of genotypes employed by me in my work were secured either from holotypes, allotypes, specimens determined by Bezzi, Villeneuve and myself, or from authentic drawings and descriptions of Brauer and Bergenstamm and other authors, in each case verified by me as to the species under consideration.

All the above activities pertained to the first step in the work. The second step was to complete sorting the vast material into the trays and study every unlabeled specimen in detail. This had not yet been begun when I left Washington for Brazil, nor had it even been possible to get the genotype trays all arranged in their proper taxonomic order in the metal cases of drawers.

From the above statements of fact, it is clear that I am not to be held personally responsible either for serial taxonomic arrangement of the collection or for supposed determination of any unlabeled specimens, or for omission of such determination, or for supposed overlooking of specimens in species already studied by me, as shown by my labeled specimens, or for supposed comparisons of material with other than authentically determined genotype material.

I should add that I not only left a full generic index to the determined genotype material in the trays, but I also sent to the Museum later on a detailed manuscript assignment of genera to their respective tribes, as I had worked them out and revised them after several years of subsequent study, in order to serve as an aid to students in the use of the collection.

Burroughs and Bugs.

Recent biographers of our late nature lover, John Burroughs, have lamented the fact that he did not include in his writings some of the wonders of the insect world. This recalls to my mind my first meeting with Burroughs, some fifteen years ago, when I told him that my interest was entirely in entomology. I shall hardly forget his reply: "Well, I ain't much on bugs!"

KARL R. COOLIDGE, Hollywood, California.

Two New Saturnids from South America (Lepid.).

By W. SCHAU, U. S. National Museum, Washington, D. C.

Ormiscoodes schreiteri, new species.

♂.—Palpi, throat and legs morocco red. Head olive brown. Thorax and abdomen above black, the basal segment morocco red, the others showing denuded segmental lines, the anal hairs xanthine orange; abdomen below white overlaid with light brownish olive hairs; sublateral white spots with lateral white points.

Fore wing: a dusky brown oblique streak from base of costa to inner margin, followed by a large triangular white space, its base on costa; medial space dusky drab, somewhat mottled, with white on costa and inner margin; the end of cell blackish brown, with a short white streak on median; a large white reniform spot across disco-cellular from vein 3 to subcostal, containing a baryta yellow spot mottled with black bristly scales, and emitting a white branch on vein 5; terminal third slightly paler than medial space; a postmedial whitish patch from costa to vein 6, and a vertical white line from vein 3 to inner margin; a broad whitish subterminal fascia, inbent from costa to vein 5, then outbent to termen at vein 3 and tornus.

Hind wing thinly scaled, the base and termen suffused with brownish drab, the latter also mottled with white; a faint spot on discocellular edged with white, morocco red hairs on base of inner margin.

Wings below whitish with traces of dusky drab lines, the large discal spot of fore wing seen in transparency as entirely white.

Expanse 68 mm.

Habitat.—Tucuman, Argentine Republic. *Type*.—Cat. No. 27625, U. S. N. M.

Dirphia lulesa, new species.

♂.—Head, palpi and throat tawny. Collar and thorax brownish olive with a few long whitish hairs, the patagia crossed by a white bar and tipped with morocco red, similar tufts on meta-thorax. Abdomen mars yellow with transverse black lines expanding dorsally; lateral white spots; venter brownish drab with transverse mars yellow and tawny lines. Femora thickly clothed with tawny hairs, the tibiae and tarsi black, the tibiae with long white fringe.

Fore wing whitish irrorated with light drab and pale drab gray, also with hair brown scales on disc and still more on

terminal space; base below cell to vein 2 and inner margin dark grayish olive mottled with some long whitish hairs and some morocco red hairs at base of inner margin, limited by a lunular black line crossed by a finer mars yellow line; a few black and yellow hairs in cell above the line; a hessian brown bar on discocellular, its base resting on a similar line on median between veins 3 and 4 and projecting slightly at vein 5, entirely edged with black and mars yellow scales; an outer fine line faintly incurved of black and mars yellow scales from vein 7 to inner margin, a triangular dusky shade from it expanding on costa; an incurved paler shade from apex to tornus defined by absence of black irrorations; veins terminally mars yellow.

Hind wing whitish irrorated with drab and hair brown on outer margin forming a terminal band and a subterminal line, the latter black towards inner margin; costa and disc to postmedial line suffused with flesh pink, the base, cell and inner margin to postmedial with long jasper pink hairs; postmedial line thick, black, incurved below costa then evenly outcurved; a large round black spot over discocellular, its center irrorated with light blue scales; veins terminally mars yellow.

Fore wing below whitish, the costa, cell and beyond near outer line apricot buff, also the veins to termen, the terminal interspaces irrorated with drab and apricot buff; an oval black spot over discocellular containing some whitish scales.

Hind wing below whitish thickly irrorated with drab and apricot buff suffusions on costa and postmedially; a white line on discocellular edged with cinnamon rufous; a faint dark line straight from costa near apex to beyond middle of inner margin; the veins apricot buff.

Expanse 58 mm.

Habitat.—Lules, Argentine Republic. *Type*.—Cat. No. 27626, U. S. N. M.

Belongs to the group of *D. latemedia* Druce, *placida* Schs. and *tusina* Schs., having the basal spot on inner margin of fore wing as in those species, and is immediately distinguished by the ocellus of hind wing.

Strymon loki Skinner—A Correction. (Lepid., Lycaenidae).

I learn from Dr. John Adams Comstock that the life-history of the butterfly I described in *Entomological News*, June, 1924, is not that of *loki* Skinner, but of *siva* Edwards.

KARL R. COOLIDGE, Hollywood, California.

ENTOMOLOGICAL NEWS

PHILADELPHIA, PA., JANUARY, 1925.

An International Congress of Entomology in 1925?

The following is from a letter received by Dr. Henry Skinner, as a member of the Executive Committee of the Third International Congress of Entomology, which it had been originally planned to hold in Vienna in 1915.

"It has been proposed from various sides in England and abroad that the Third International Congress of Entomology be held in 1925 in a neutral country, where entomologists of the belligerent countries could meet without embarrassment, and Switzerland has been suggested as a suitable place. I have been assured that English entomologists would welcome such a proposal and would attend the Congress. I think Zürich would be the most suitable town and August (first half) most convenient for the majority of entomologists. What do you think? I consider it very important that the younger entomologists, who have entered the field since 1912 (Oxford Congress), should become imbued with the idea of permanency of the International Congress and the solidarity of science, whatever the feelings of an entomologist as a citizen of this or that country may be. Switzerland is well worth visiting and should prove attractive to many entomologists who have not yet been in the Alps. If your opinion and that of other members of the Executive Committee are favorable to the proposal expressed above, we can take definite steps and I shall keep you informed of all we are doing in this connection.

With kind regards, Sincerely yours,
K. JORDAN."

The NEWS is glad to give publicity to this letter and thus bring the proposal which it contains before the entomologists of America. Dr. Skinner favors the plan and will attend the Congress if possible. We shall be glad to welcome expressions of opinion from our readers.

How to Meet the Rising Costs of Publication.

For years, since the close of the World War, the NEWS has looked forward to a time when the costs of printing and of engraving would decline, enabling it to return to something like its pre-war condition in size, illustrations and subscription price. These hopes, alas, have not been realized. On the contrary, the cost of manufacture for 1925 is greater than that for 1924

and we must meet the situation as best we can. The subscription price for 1925 will not be increased, but it must be raised for 1926, or the size of the journal very greatly reduced. The latter plan would deprive you of reading matter and would meet with disfavor by authors who even now find it difficult to have their papers published with any degree of promptness. In favor of an increase of the subscription are the present relatively lower price of the NEWS, as compared with most American entomological journals, and the monthly classified list of the latest literature in our science from all parts of the world, a feature possessed by no other similar periodical.

We shall be glad to hear from our subscribers as to the best way in which these problems of publication and finance can be solved.

Entomological Literature

COMPILED BY E. T. CRESSON, JR.

Under the above head it is intended to note papers received at the Academy of Natural Sciences, of Philadelphia, pertaining to the Entomology of the Americas (North and South), including Arachnida and Myriopoda. Articles irrelevant to American entomology will not be noted; but contributions to anatomy, physiology and embryology of insects, however, whether relating to American or exotic species will be recorded. The numbers in **Heavy-Faced Type** refer to the journals, as numbered in the following list, in which the papers are published.

All continued papers, with few exceptions, are recorded only at their first installments.

Papers of systematic nature will be found in the paragraph at the end of their respective orders. Those containing descriptions of new genera and species occurring north of Mexico are preceded by an *.

For records of Economic Literature, see the Experiment Station Record, Office of Experiment Stations, Washington. Also Review of Applied Entomology, Series A, London. For records of papers on Medical Entomology, see Review of Applied Entomology, Series B.

The titles occurring in the *Entomological News* are not listed.

4—Canadian Entomologist. 5—Psyche. 7—Annals of the Entomological Society of America. 8—The Entomologist's Monthly Magazine. 9—The Entomologist. 10—Proceedings of the Entomological Society of Washington. 13—Journal of Entomology and Zoology, Claremont, Cal. 14—Entomologische Zeit., Frankfurt a.M. 17—Entomologische Rundschau, Stuttgart. 18—Internationale Entomolog. Zeit., Guben. 20—Societas Entomologica, Stuttgart. 23—Bollettino del Laboratorio di Zool. Gen. e Agr., Portici. 24—Annales del la Societe Ent. de France. 39—The Florida Entomologist. 41—Bulletin de la Societe Ent. Suisse. 55—The Pan-Pacific Entomologist. 61—Proceedings of the California Acad. of Sciences. 71—Novitates Zoologicae. 75—Annals and Mag. of Nat. History, London. 78—Bulletin Biologique de la France et de la Belgique. 90—The American Naturalist. 98—Annals of Tropical Medicine and Parasitology, Liverpool. 102—Broteria, Ser. Zool., Braga.

139—Bulletin of the So. California Acad. Sciences. 147—Archiv f. Mikroskopische Anatomie u. Entwicklungsmechanik, Berlin. 150—Jenaische Zeit. f. Naturwissenschaft.

GENERAL. Aue.—Die insektenkunde als weg zur erkenntnis des schonen in der natur. 14, xxxviii, 45-6 (cont.) **Blackman & Stage.**—On the succession of insects living in the bark and wood of dying, dead and decaying hickory. (Tech. Pub., No. 17, N. Y. Col. Forestry, xxiv, 1-269.) **Fullaway, D. T.**—Insect collecting in Panama. (Hawaiian For. & Agric., xxi, 94-8.) **Griep, B.**—Ernste mahnung zur rechten zeit. 18, xviii, 178. **MacGillivray, A. D.**—Obituary notice. 7, xvii, 233. **Oberthur, C.**—Notice necrologique sur . . . 24, xcii, 163-78. **Schjelderup, T.**—Biologische eigentumlichkeiten bei insekten. 14, xxxviii, 41-2. **Weiss, H. B.**—More notes on fungus insects and their hosts. 5, xxxi, 236-7.

ANATOMY, PHYSIOLOGY, MEDICAL, ETC. **Baerg, W. J.**—The effect of the venom of some supposedly poisonous arthropods. 7, xvii, 343-52. **Braun, A. F.**—The frenulum and its retinaculum in the lepidoptera. 7, xvii, 234-57. **Bretschneider, F.**—Ueber die gehirne des eichenspinners und des seidenspinners. (Lasiocampa quercus and Bombyx mori). 150, lx, 563-78. **Bugnion, E.**—Les organes buccaux de la scolie. 41, xiii, 368-96. **Bugnion, E.**—L'elevage du ver luisant provencal (Phausis delarouzei). 78, lviii, 500-5. **Cappe de Baillon, P.**—Recherches sur le gynandromorphisme. (Orthopteres; Phasgonurides). (La Cellule, xxxiv, 71-129.) **Evans, A. M.**—Descriptions of new mosquitos from South America. 98, xviii, 363-75. **Eyer, J. R.**—The comparative morphology of the male genitalia of the primitive lepidoptera. 7, xvii, 275-342. **Geiders, H.**—Mundteile der honigbiene. (Mikrosk. f. Naturfr. . . Berlin, ii, 247-8.) **Grandi, G.**—Studi sullo sviluppo postembrionale delle varie razze del Bombyx mori. 23, xvii, 3-40. **Hirschler, J.**—Technische hinweise zum operativen vorgehen (transplantation, implantation u. a.) an amphibien-und insektenlarven. 147, ciii, 357-67. **Janssens, F. A.**—La chiasmotypie dans les insectes. (La Cellule, xxxiv, 135-355.) **Knight, H. H.**—On the nature of the color patterns in Heteroptera with data on the effects produced by temperature and humidity. 7, xvii, 258-74. **Lineburg, B.**—Communication by scent in the honeybee—a theory. 90, lviii, 530-7. **Meissner, O.**—Zu Herrn Schjelderup Ebbes aufsatz ueber Gryllus campestris. 14, xxxviii, 39. **Pictet, A.**—Recherches sur l'heredite chez les lepidopteres. 41, xiii, 358-9. **Schulze, H.**—Ueber die

fuhrerhaltung von *Habrobracon jugl.* zugleich ein beitrage zur sinnesphysiologie und psychologie dieser schlupfwespen. 52, lxi, 122-34. **Seitz, A.**—Zur phylogenie des insektenstammes. 17, xli, 21-2 (cont.) **Seitz, A.**—Zur sinnestätigkeit der lepidopteren. 17, xli, 39-40.

ARACHNIDA AND MYRIOPODA. **Wymore, F. H.**—Biology and control of the garden centipede. 13, xvi, 73-88.

***Chamberlin, J. C.**—*Hesperochermes laurae*, a n. sp. of false scorpion from Cal. inhabiting the nest of *Vespa*. 5, xxxi, 89-92. **Mello-Leitao.**—Quelques arachnides nouveaux du Bresil. 24, xcii, 179-88. **Silvestri, F.**—Descrizione di un novo genere di Polydesmidae (Diplopoda) termitofilo di Costa Rica. 23, xvii, 172-5.

THE SMALLER ORDERS OF INSECTA. **Denis, J. R.**—Sur les Collemboles du museum de Paris. 24, xcii, 211-60. **Longinos Navas, R. P.**—Insectos de la America Central. 102, xxi, 55-91. ***Snyder, T. E.**—A non-subterranean termite in Virginia. 10, xxvi, 207-9. **Watson, J. R.**—Thysanoptera of N. A. Additions and a correction 39, viii, 29-30.

ORTHOPTERA. **Grasse, P. P.**—Etude biologique sur *Phaneroptera 4-punctata* et *Ph. falcata*. 78, lviii, 454-72.

HEMIPTERA. **Baker, C. F.**—Nomenclatorial notes on the Jassoidea. (Phil. Jour. Sc., xxiv, No. 3.) **Barber, G. W.**—Notes on *Piesma cinerea*. 5, xxxi, 229-32. **Hoffman, W. E.**—Biological notes on *Lethocerus americanus*. 5, xxxi, 175-83. **Jones, T. H.**—The life history and stages of *Cimolus obscurus*. 10, xxvi, 197-205.

***Annand, P. N.**—A n. sp. of *Adelges* (Phylloxeridae). 5, xxxi, 79-82. ***Barber, H. G.**—A n. sp. of *Pseliopus* (Reduviidae). 10, xxvi, 211-3. **Schmidt, E.**—*Pseudaphrophora chilensis*, eine neue Cercopidengattung und art von Chile. 20, xxxix, 43. ***Shotwell, R. L.**—A new sp. of the mealy-bugs. 7, xvii, 353-4. **Weiss & Lott.**—Notes on *Piesma cinerea* in New Jersey. 5, xxxi, 233-5.

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***Barnes & Benjamin.**—Notes on the genus *Noctuella* (Pyralidae). 10, xxvi, 205-6. On the correct name of the brown-tail moth. 10, xxvi, 213. **Gillotte, A. G. M.**—A new Ithomiine butterfly from Costa Rica. 9, 1924, 249-50. **Hall, A.**—Descriptions of two new forms of *Chlosyne*. (Nymphalidae). 9, 1924, 241-2. ***Hill, C. A.**—A new noctuid moth from Arizona. 139, xxiii, 158. **Jordan, K.**—Two new subspecies of *Sphingidae*. 71, xxxi, 298. **Kruger, E.**—Beitrage zur kenntnis der columbischen Satyriden. 17, xli, 38-9, (cont.) **McDunnough, J.**—Some synonymical notes on *L.* 4, lvi, 249. Notes on the ribearia group of the genus *Itame*. 4, lvi, 271-7. **Preece, W. H. A.**—Notes on the *Catocalinae* of Sault Ste. Marie, Ontario. (Can. Field-Nat., xxxviii, 170-1.) **Riley, N. D.**—A note on the genus *Pyrrhopygopsis* (Hesperiidae). 9, 1924, 245-9. **Tams, W. H. T.**—Notes on *Heliconisa pagenstecheri* in the Argentine. 9, 1924, 243-5.

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***Curran, C. H.**—Four apparently undescribed D. from Canada. 4, lvi, 250-3. Two undescribed sps. of *Cyrtopogon*, with notes. 4, lvi, 277-80. Brief diagnoses of some D. occurring in New England. 5, xxxi, 226-8. **Edwards, F. W.**—New species of nematoceros diptera from Fiji and Trinidad. 75, xiv, 568-74. ***Malloch, J. R.**—New and little known calypterate D. from New England. 5, xxxi, 193-204. *Exotic Muscaridae XIV.* 75, xiv, 513-22. ***Shannon, R. C.**—North Am. species of *Ferdinandeia* (Syrphidae). 10, xxvi, 214-5. ***Spuler, A.**—North Am. sps. of the genera *Sphaerocera* and *Aptilotus* (Borboridae). 55, i, 66-71. ***Tothill, J. D.**—A revision of the Nearctic sps. in the genus *Fabriciella* (Tachinidae). 4, lvi, 257-69. ***Van Duzee, M. C.**—New Canadian *Dolichopodidae*. 4, lvi, 244-9. No. Am. sps. of *Paraphrosylus*, a subg. of *Aphrosylus*. 55, i, 73-8. **Weiss, H. B.**—Diptera collected on a N. J. salt marsh. 4, lvi, 255-7. ***West, L. S.**—New northeastern *Dexiinae*. 5, xxxi, 184-92.

COLEOPTERA. **Sicard, A.**—Un *Scymnus* (Pullus) nouveau de Mexique (*Coccinellidae*). 75, xiv, 531-32. ***Swaine, J. M.**—Four n. sps. of *Carphoborus* (*Ipidae*). 4, lvi, 234-6.

Barber, H. S.—The generic names of the clover and alfalfa weevils *Hypera* and *Phytonomus*. 10, xxvi, 216.
***Blaisdell, F. E.**—New forms of *Coniontis*, p. 83. A new *Centrioptera* from Texas, p. 87. 5, xxxi, 83-8. New melyrids from southeastern California. 61, xiii, 249-59. ***Fisher, W. S.**—A n. sp. of *Ataxia* from the U. S. (*Cerambycidae*). 4, lvi, 253-4. **Hatch, M. H.**—A preliminary list of the C. of the Cranberry Lake region, New York, excl. *Buprestidae*, *Cerambycidae*, & *Ipidae*, (Tech. Pub. N. Y. Col. For., xxiv, 273-312.) **Heikertinger, F.**—Die Halticinen genera der Palaearktis und Nearktis. Bestimmungstabellen. (Koleop. Rundschau, xi, 25-48). **Mundinger, F. G.**—A preliminary list of the *Buprestidae* and *Cerambycidae* of the Cranberry Lake region, N. Y. (Tech. Pub. N. Y. Col. For., xxiv, 313-20.) ***Notman, H.**—Two new staphylinids from Cranberry Lake, N. Y. (Tech. Pub., 17, N. Y. Col. For., xxiv, 270-2.) **Van Dyke, E. C.**—Some C. recently established in Cal. 55, i, 78.

HYMENOPTERA. **Ainslie, C. N.**—Note on the nesting habits of *Chlorion elegans*. 4, lvi, 269-71. **Davis, W. T.**—*Polistes* wasps and their nests. (Proc. Staten Isl. Inst., ii, 137-8.) **Genieys, P.**—Contribution a l'etude des *Evaniidae* (*Zeuxevania splendidula*). 78, lviii, 482-94. **Reinhard, E. G.**—The life history and habits of the solitary wasp, *Philaethus gibbosus*. (Smiths. Rept., 1922, 363-376.)

***Cockerell, T. D. A.**—Anthophorid bees in the collection of the Cal. Ac. Sc., p. 49. Bees of the genus *Andrena* in the Coll. of the Cal. Ac. Sc., p. 57. 55, i, 49-65. A new bee from Oregon. 5, xxxi, 243-4. ***Cockerell and Sandhouse.**—Parasitic bees (*Epeolinae* and *Melectinae*) in the collection of the Cal. Ac. Sc. (Proc. Cal. Ac. Sc., (4), xiii, 305-24.) **Dover, C.**—Aculeate H. collected by C. Allen in Paraguay. 8, 1924, 256-8. ***Rohwer, S. A.**—A new sawfly of the family *Xyelidae*. 10, xxvi, 215.

SPECIAL NOTICES.

Correction: The October, 1924, list has an error in the number for a title under *Physiology and Anatomy*, by Seitz. The title is correctly cited in the present list.

The NEWS for December, 1924, was mailed at the Philadelphia Post Office, December 12, 1924.

EXCHANGES

This column is intended only for wants and exchanges, not for advertisements of goods for sale. Notices not exceeding three lines free to subscribers.

These notices are continued as long as our limited space will allow; the new ones are added at the end of the column, and only when necessary those at the top (being longest in) are discontinued.

Correspondence invited from all those interested in Hungarian insects; Coleopt., Lepidopt., Hymenopt., Hemipt., etc.—Prof. Charles Sajo, Oerszentmiklos, (Komitat Pest) Hungary.

Will exchange lepidoptera of Pennsylvania for those from other parts of the continent. Frank H. Chermock, 1308 Tell Street, N. S., Pittsburgh, Pa.

Wanted: For cash. Bred or perfect caught specimens, of *Sphinx luscitiosa*, *Paonias astylus*, and *Deidamia inscriptum*. Bred specimens of other species of Sphingidae, of the rarer sorts, would also be desirable. John M. Geddes, 331 High St., Williamsport, Pa.

Wanted—American sawflies, Tenthredinoidea, in exchange for other insects, chiefly Coleoptera. Correspondence may be in English. D. Dovnar-Zapolsky, P. O. Box 573, Agricultural Experimental Station, Entomological Section, Rostov on Don, Russia.

Have a number of pamphlets and books on N. A. and exotic Cerambycidae. Will exchange these for certain families of Heteroptera and Tabanidae. G. Chagnon, P. O. Box 521, Montreal, Canada.

Buprestidae.—Will determine and exchange Buprestidae of the world and exchange separata on this family. Dr. Jan Obenberger, Prague II., Václavské náměstí 1700, Museum, Czechoslovakia.

Wanted—Connection with collectors who can furnish me early in the fall living and hibernating pupae of western and southern Papilio and Saturnidae and allied groups. Fertile eggs of *Apanteris* and *Catocala* also desired. Max Rothke, 1841 E. Elm St. (R. D. 2), Scranton, Pa.

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Books for Exchange—Dalle Torre, Cat. Hym., vols. 1 to 7; Can use Peckham, Solitary Wasps; Bird Lore, vols. 9 to 14; U. S. Nat. Mus. bull. 107. O. A. Stevens, Agricultural College, North Dakota.

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